

TENT COOPERATION TRE Y

PCT

NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Commissioner
 US Department of Commerce
 United States Patent and Trademark
 Office, PCT
 2011 South Clark Place Room
 CP2/5C24
 Arlington, VA 22202
 ETATS-UNIS D'AMERIQUE
 in its capacity as elected Office

Date of mailing (day/month/year) 09 April 2001 (09.04.01)	
International application No. PCT/EP00/07166	Applicant's or agent's file reference 701.866
International filing date (day/month/year) 26 July 2000 (26.07.00)	Priority date (day/month/year) 27 July 1999 (27.07.99)
Applicant TOMELLERI, Raffaele	

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International Preliminary Examining Authority on:
 19 February 2001 (19.02.01)

☐ in a notice effecting later election filed with the International Bureau on:

2. The election ☒ was
☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No.: (41-22) 740.14.35	Authorized officer Zakaria EL KHODARY Telephone No.: (41-22) 338.83.38
---	--

PATENT COOPERATION TREATY

PCT

REC'D 07 MAY 2001

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

14

Applicant's or agent's file reference 701.866	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/EP00/07166	International filing date (day/month/year) 26/07/2000	Priority date (day/month/year) 27/07/1999
International Patent Classification (IPC) or national classification and IPC G05B19/404		
Applicant FPT INDUSTRIE S.P.A. et al.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.


2. This REPORT consists of a total of 7 sheets, including this cover sheet.

- ☐ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☒ Certain defects in the international application
- VIII ☒ Certain observations on the international application

Date of submission of the demand 19/02/2001	Date of completion of this report 03.05.2001
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized officer Roberts, N Telephone No. +49 89 2399 2742



INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/EP00/07166

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):
Description, pages:

1-14 as originally filed

Claims, No.:

1-30 as originally filed

Drawings, sheets:

1/5-5/5 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/EP00/07166

☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims 1-30
	No: Claims
Inventive step (IS)	Yes: Claims 1-30
	No: Claims
Industrial applicability (IA)	Yes: Claims 1-30
	No: Claims

2. Citations and explanations
see separate sheet

VII. Certain defects in the international application

The following defects in the form or contents of the international application have been noted:
see separate sheet

VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:
see separate sheet

A - CONCERNING ITEM VIII

1. The claims are not clear (Art. 6 PCT). Specific clarity objections are presented below:
 - a) The term "partial difference", used throughout the claims (eg. claim 1, line 4), is not clear in the context in which it is used.
 - b) In claim 1 (line 4) the term "referred to a least one predetermined degree of freedom" is not clear.
 - c) Claims 1 and 11 do not make clear that the corrective movement of the tool occurs relative to the structure directly supporting the tool.
 - d) Claims 1 and 11 do not make clear that the response rate referred to is at least double that of the machine tool itself.
2. In addition, claims 1 and 11 contain further minor unclarities and inconsistencies. In order to be able to assess inventive activity, the examiner has therefore used the description and drawings, and on the basis of these has interpreted claims 1 and 11 as having the following meaning (amendments underlined):
3. Examiner's Interpretation of Claim 1:
"A method for correcting tool position errors in machine tools, the method comprising:

-determining at least part of the difference, in at least one predetermined degree of freedom, between the true position of the tool and a point on the theoretical geometrical locus which the tool should describe,

-converting said difference into a correction signal, and

-using said correction signal to move the tool in accordance with that degree of

freedom, whereby the corrective movement of the tool occurs relative to the structure directly supporting the tool at response rate at least double that of the machine tool itself."

4. Examiner's Interpretation of Claim 11:

"A device for implementing the method claimed in of the claims 1 to 10, said device comprising:

-at least one member for moving the tool in accordance with at least one predetermined degree of freedom, said member being inserted into the structure directly supporting the tool (10, 12, 54) *[deletion]* and having a response rate at least double that of the machine tool itself;

-means for determining at least part of the difference, in said at least one degree of freedom, between the true position of the tool and a point on the theoretical geometrical locus which the tool should describe, and

-means for converting said difference into a control signal for moving said member in accordance with said at least one degree of freedom."

B - CONCERNING ITEM V

1. The following documents are referred to:

D1: US 5 604 413

D2: "Power Plus Präzision"

[second item in International Search Report]

2. Both D1 and D2 disclose miniature actuators for use in similar situations to that of the current application. D1 concentrates on position correction, and D2 on the elimination of vibration.
3. However, the prior art does not disclose the positioning of such a device in such a way that it acts between the structure directly supporting the tool and the tool itself.
4. It is this feature of the current application which enables a high precision and adequately fast position correction to be achieved. As the inclusion of such a feature is neither disclosed in the prior art, not rendered obvious by the common general knowledge, the requirements of Art. 33(3) PCT are met [Inventive Step].
5. Claims 2-10 and 12-30, by virtue of their dependence on claims 1 and 11 respectively, are also considered to meet the requirements of Article 33(3) PCT [Inventive Step].
6. All the claims of this application are considered to meet the requirements of Article 33(2) PCT [Novelty] and of Article 33(4) PCT [Industrial Applicability].

C - CONCERNING ITEM VII

1. This report concludes the international procedure. Therefore the observations made therein are intended to assist the Applicants if they should decide to subsequently enter into the national/regional phase. Therefore it is not appropri-

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/EP00/07166

ate to make a response concerning these observations to the International Preliminary Examining Authority.

2. Should the Applicants decide to enter into the national/regional phase, in particular before the European Patent Office, the following matters would have to be addressed:
 - a) Amendments would have to be carried out to fully address all the objections raised under section A. It is suggested that the wording of the "examiners interpretation of claims 1 and 11" [see points A(3) and A(4) above] be adopted as a basis for any possible European Application. The applicants would of course have to confirm that this wording does not introduce added subject-matter, and to file appropriately amended claims pages. It should be noted that any substantial alteration to this "interpreted" wording of claims 1 and 11 would necessitate a further analysis of clarity and inventive step in the European phase.
 - b) D1 would have to be identified in the description and the relevant material disclosed therein briefly discussed.
 - c) The description, particularly the summary of invention in the introductory portion, would have to be amended in order to bring it into conformity with the new independent claims 1 and 11.
 - d) The remaining dependent claims would have to be adapted to the new independent claims and 11. In particular it would have to be ensured that terminology used in the dependent claims is consistent with the terminology used in the new independent claims 1 and 11.

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 701.866	FOR FURTHER ACTION see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. PCT/EP 00/ 07166	International filing date (day/month/year) 26/07/2000	(Earliest) Priority Date (day/month/year) 27/07/1999
Applicant FPT INDUSTRIE S.P.A.		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 3 sheets.



It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

- a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.



the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing :



contained in the international application in written form.



filed together with the international application in computer readable form.



furnished subsequently to this Authority in written form.



furnished subsequently to this Authority in computer readable form.



the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.



the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. ☐ **Certain claims were found unsearchable** (See Box I).

3. ☐ **Unity of invention is lacking** (see Box II).

4. With regard to the **title**,

the text is approved as submitted by the applicant.



the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

the text is approved as submitted by the applicant.



the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is Figure No.

as suggested by the applicant.



because the applicant failed to suggest a figure.



because this figure better characterizes the invention.

1



None of the figures.

INTERNATIONAL SEARCH REPORT

International Application No

/EP 00/07166

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 G05B19/404 B25J9/16

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 G05B B25J

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

WPI Data, PAJ, EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 604 413 A (RASTEGAR JAHANGIR ET AL) 18 February 1997 (1997-02-18) column 4, line 63, paragraph 4 -column 7, line 33 column 13, line 49 -column 15, line 65; figures 1,9-12	1-17, 19-27
X	LAUER L: "POWER PLUS PRAEZISION" ELEKTROTECHNIK,DE,VOGEL VERLAG K.G. WURZBURG, vol. 74, no. 9, 24 September 1992 (1992-09-24), pages 36,39-40,42,, XP000311802 ISSN: 1431-9578	1,11
A	page 40, right-hand column, last paragraph -page 42, right-hand column, last paragraph; figure 5 --- -/--	2-10, 12-30

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

* Special categories of cited documents:

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *G* document member of the same patent family

Date of the actual completion of the international search

15 December 2000

Date of mailing of the international search report

22/12/2000

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Nettesheim, J

INTERNATIONAL SEARCH REPORT

International Application No

/EP 00/07166

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>US 5 535 306 A (STEVENS CRAIG L) 9 July 1996 (1996-07-09) the whole document -----</p>	1-30

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

/EP 00/07166

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 5604413 A	18-02-1997	US 6154000 A US 5742145 A	28-11-2000 21-04-1998
US 5535306 A	09-07-1996	NONE	